

**WHAT WE CLAIM IS:**

1. An isolated polypeptide comprising:
  - a) an amino acid sequence as set forth in any one of SEQ ID NOs. 1, 3, 5 or 7; or
  - b) a functional fragment or variant of the polypeptides in a) above, wherein the fragment or variant provokes a humoral and/or cellular immunological response in an animal with similar characteristics to that produced by a polypeptide as outlined above.
2. An isolated polypeptide as claimed in claims 1 wherein the functional fragment or variant incorporates a B cell or T cell epitope of the polypeptide.
3. An isolated nucleic acid molecule wherein the molecule:
  - a) comprises a nucleotide sequence as set forth in any one of SEQ ID NOs. 2, 4, 6 or 8;
  - b) is a functional fragment or variant of the molecule(s) in a); or
  - c) is able to hybridise under stringent conditions to the molecule(s) in a) or b); or
  - d) is a complement of the molecule(s) defined in a), b) or c); or
  - e) is an anti-sense sequence corresponding to any of the sequences in a) – d).
4. An isolated nucleic acid molecule encoding a polypeptide as claimed in either claim 1 or 2.
5. A vector or construct comprising the nucleic acid molecule as claimed in claim 4.
6. A host cell which has been transformed with a vector or construct as claimed in claim 5.
7. An isolated ligand which binds to a polypeptide as claimed in either claim 1 or 2.
8. A probe capable of hybridizing under stringent conditions to a nucleic acid molecule as claimed in either claim 3 or 4.
9. A probe for a polypeptide as claimed in either claim 1 or 2.

10. A probe for the ligand of claim 7 when the ligand is bound to the polypeptide.
11. A method for determining whether an animal is inclined to develop immune resistance to a nematode infection characterized by steps of:
- a) obtaining a blood or serum sample from the animal;
  - b) preparing an IgE enriched or IgG depleted preparation of the sample in a);
  - c) contacting the sample at a) with a polypeptide comprising the amino acid sequence of any one of SEQ ID NOs. 1, 3, 5 or 7 or a functional fragment or variant thereof;
  - d) contacting the preparation from c) with a probe for the immuno-complex formed by IgE and the polypeptide;
  - e) detecting the probe to identify the immune status of the animal by the presence or absence of the probe.
12. A method for determining whether an animal is inclined to develop immune resistance to a nematode infection characterized by steps of:
- a) obtaining a blood or serum sample from the animal
  - b) preparing an IgE enriched or IgG depleted preparation of the sample in a);
  - c) exposing the preparation from b) with a polypeptide comprising the amino acid sequence of any one of SEQ ID NOs. 1, 3, 5 or 7 or a functional fragment or variant thereof;
  - d) washing the preparation from c) to remove any unbound IgE (i.e. IgE that is not bound to the polypeptide);
  - e) detection of immuno-complex formed by the polypeptide and IgE at step c) with monoclonal antibodies to IgE.
  - f) detection of IgE with appropriately labeled anti-antibodies.
13. A method for determining whether an animal is inclined to develop immune resistance to a nematode infection characterized by steps of:

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- a) exposing a portion of the animal's skin to a polypeptide comprising the amino acid sequence of SEQ ID NOs. 1, 3, 5 or 7 or a functional fragment or variant thereof;
  - b) determining the immune status by the presence or absence of an immune or allergic reaction.
14. A method for determining whether an animal is inclined to develop immune resistance to a nematode infection characterized by steps of::
- a) determining the immune status of male and female animals via the use of Tco-aspin, Oc-aspin and/or Hc-aspin;
  - b) selecting males and females disposed to develop immune resistance to nematodes;
  - c) using selected animals to breed progeny resistant to said infection.
15. An isolated polypeptide as claimed in either claim 1 or 2 wherein the polypeptide is a functional fragment or variant of SEQ ID NO. 5 having at least 90% homology to SEQ ID NO. 5.
16. An isolated nucleic acid molecule as claimed in claim 3 wherein the molecule is a functional fragment or variant of SEQ ID NO. 6 having at least 94% homology to SEQ ID NO. 6.
17. An isolated polypeptide as claimed in either claim 1 or 2 wherein the polypeptide is a functional fragment or variant of SEQ ID NO. 1 having at least substantially 75% homology to SEQ ID NO. 1.
18. An isolated nucleic acid molecule as claimed in claim 3 wherein the molecule is a functional fragment or variant of SEQ ID NO. 2 having at least substantially 70% homology to SEQ ID NO. 2.
19. An isolated polypeptide as claimed in either claim 1 or 2 wherein the polypeptide is a functional fragment or variant of SEQ ID NO. 3 having at least 80% homology to SEQ ID NO. 3.
20. An isolated nucleic acid molecule as claimed in claim 3 wherein the molecule is a functional fragment or variant of SEQ ID NO. 4 having at least substantially 70% homology to SEQ ID NO. 4.
21. An isolated polypeptide as claimed in either claim 1 or 2 wherein the polypeptide is a

functional fragment or variant of SEQ ID NO. 7 having at least 80% homology to SEQ ID NO. 7.

22. The use of a ligand which binds to a polypeptide of the present invention to determine whether an animal is inclined to develop immune resistance to nematode infection.

23. An isolated nucleic acid molecule as claimed in claim 3 wherein the molecule is a functional fragment or variant of SEQ ID NO. 8 having at least 75% homology to SEQ ID NO. 8.